Protocol Development Summary

NETN protocol: Coastal Breeding Birds

NETN park where protocol will be implemented:
Boston Harbor Islands NRA (BOHA)

Justification/issues being addressed:
Birds are an important component of park ecosystems, and their high body temperature, rapid metabolism, and high ecological position in most food webs make them a good indicator of local and regional ecosystem change. Moreover, among the public, birds are a high profile taxa, and many parks provide information on the status and trends of the park's avian community through their interpretive materials and programs. Boston Harbor Islands NRA has been identified as an Important Bird Area (IBA) by Massachusetts Audubon. An IBA is a site that provides essential habitat to one or more species of breeding, wintering, or migrating birds. Coastal breeding birds need to be monitored at BOHA because of the sensitivity of these species to disturbance and because of their important trophic position in marine ecosystems.

Specific monitoring questions and objectives to be addressed by the protocol:

1. Determine annual changes and long-term trends in population size and spatial distribution of coastal breeding birds, including terns and oystercatchers, in the Boston Harbor Islands area
2. Improve our understanding of breeding bird/habitat relationships and the effects that environmental conditions and human activities have on coastal bird populations. We will correlate changes in bird populations with site-specific information about park management activities, visitor use levels, and changes in habitat metrics including weather, storm events, and contaminant levels from data collected in Boston Harbor

Basic approach:
Massachusetts Audubon has been developing and refining survey methods for terns for several years (Perkins et al. 2004). They have used boat and airplane transects to evaluate population sizes, spatial distribution, and behavior of a variety of species. We will evaluate whether these methods will address the objectives of NETN coastal breeding bird monitoring, and we will also consider other survey methods (such as boat or land-based counts of known breeding colonies). The timing of these surveys will be based on the known average arrival dates of coastal birds returning to Massachusetts from their wintering quarters at the beginning of the breeding season, and the known dates at which both adults and juvenile birds begin to disperse from the colonies at the end of the breeding season.

Principal investigators and NPS lead:
This protocol will be developed through a cooperative agreement with Ellen Jedrey and Wayne Petersen of Massachusetts Audubon. NETN network coordinator Brian Mitchell is the NPS lead.

Development schedule, budget, and expected interim products:

Protocol development will begin in summer 2006, draft protocols will be submitted by spring 2007. Field testing of these draft protocols will occur during the 2007 field season, and updated SOPs will be submitted by spring 2008.

The budget for development of this protocol is estimated to be $12,000 in 2006 and $12,000 in 2007, which includes funds for partial salary for a Massachusetts Audubon employee responsible for drafting SOPs, and costs for field testing draft protocols.

Literature cited:

Perkins, S., T. Allison, A. Jones, & G. Sadoti. 2004. A survey of tern activity within Nantucket Sound, Massachusetts, during the 2003 breeding season. Final Report for Massachusetts Technology Collaborative, 12 April 2004. Massachusetts Audubon Society. http://www.massaudubon.org/PDF/News/Spring2003MASternsurveyfinal.pdf.